

**WHAT IS CLAIMED IS:**

1           1. A method for casting a polyacrylamide gel in a plastic gel enclosure,  
2 said method comprising

3                 (a) forming an aqueous solution of a monomer mixture comprising  
4 acrylamide, a crosslinking agent, and an oxygen scavenger which is a member  
5 selected from the group consisting of sodium sulfite, sodium bisulfite, sodium  
6 thiosulfate, sodium lignosulfate, ammonium bisulfite, hydroquinone,  
7 diethylhydroxyethanol, diethylhydroxylamine, methylethylketoxime, ascorbic acid,  
8 erythorbic acid, and sodium erythorbate; and

9                 (b) polymerizing said monomer mixture in a plastic gel enclosure to form a  
10 polyacrylamide gel.

1           2. A method in accordance with claim 1 in which said monomer mixture  
2 further comprises a free radical initiator.

1           3. A method in accordance with claim 1 in which said oxygen scavenger  
2 is a member selected from the group consisting of sodium sulfite, sodium bisulfite, sodium  
3 thiosulfate, sodium lignosulfate, and ammonium bisulfite.

1           4. A method in accordance with claim 1 in which said oxygen scavenger  
2 is a member selected from the group consisting of sodium sulfite and sodium bisulfite.

1           5. A method in accordance with claim 1 in which said oxygen scavenger  
2 is sodium sulfite.

1           6. A method in accordance with claim 1 in which the concentration of  
2 said oxygen scavenger in said aqueous solution is from about 1 mM to about 30 mM.

1           7. A method in accordance with claim 3 in which the concentration of  
2 said oxygen scavenger in said aqueous solution is from about 1 mM to about 30 mM.

1           8. A method in accordance with claim 3 in which the concentration of  
2 said oxygen scavenger in said aqueous solution is from about 3 mM to about 15 mM.

1           9. A method in accordance with claim 1 in which said plastic gel  
2 enclosure is a member selected from the group consisting of polycarbonate, polystyrene,

3 styrene-acrylonitrile copolymer, polyethylene terephthalate, polyethylene terephthalate  
4 glycolate, and poly(ethylene naphthalenedicarboxylate).

1           **10.** A method in accordance with claim **1** in which said monomer mixture  
2 comprises acrylamide and N,N'-methylene-bisacrylamide in aqueous solution, the total of  
3 said acrylamide and N,N'-methylene-bisacrylamide amounting to from about 5 g to about  
4 30 g per milliliter of said aqueous solution.

1           **11.** A method in accordance with claim **1** in which said monomer mixture  
2 comprises acrylamide and N,N'-methylene-bisacrylamide at a combined concentration of  
3 from about 10 g to about 20 g per milliliter of said aqueous solution.

1           **12.** A method in accordance with claim **10** in which the weight ratio of  
2 acrylamide to N,N'-methylene-bisacrylamide is from about 10:1 to about 100:1.

1           **13.** A method in accordance with claim **10** in which the weight ratio of  
2 acrylamide to N,N'-methylene-bisacrylamide is from about 25:1 to about 50:1.